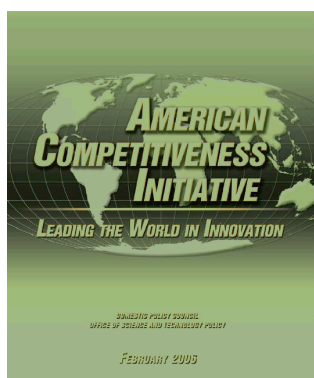


INTRODUCTION

“Genius is the summed production of the many with the names of the few attached for easy recall.” Edward O. Wilson

The 20th century was a time of invention and innovation from the airplane to the space shuttle, from the calculator to the PC, from the electric motor to the nuclear submarine, from anesthesia to micro-surgery, from the telephone to global communication, from one-off manufacturing to mass production.

It was truly the century of the engineer. Entirely new engineering disciplines emerged aeronautical engineering, aerospace engineering, nuclear engineering, computer engineering, bioengineering and classical disciplines flourished. The number of mechanical engineers in the United States grew from about 10,000 at the opening of the century to about a quarter of a million by the close of the century. Industrial engineering was born.



The challenge for the 21st century is to continue and advance the importance and recognition of engineering to society. This is a challenge of research in which academe plays an important role. NSF will be at the forefront of this challenge. While on the one hand we face a period of limited resources, on the other hand we face an imperative to contribute to the larger welfare of society.

CMMI enables a globally competitive and sustainable future for the nation by supporting fundamental research that advances the frontiers of knowledge. CMMI focuses research support on areas relating to designing, building and securing critical infrastructure and manufacturing and enterprise systems. CMMI also invests in engineering education by supporting research that leads to new engineering pedagogy and activities that engage engineering students.

Such support is in line with the goals of the president’s 2006 *American Competitiveness Initiative* (ACI), which states that, “Sustained scientific advancement and innovation ... are key to maintaining [the nation’s] competitive edge.” CMMI addresses the ACI challenge with this plan, which sets forth guidelines for the application of its limited resources.

A new division

The division was formed Oct. 1, 2006, by the merger of the Division of Civil and Mechanical Systems (CMS) and the Division of Design and Manufacturing Innovation (DMI). The merger brought together the programs and staff of the two former divisions with no change in programs or staff.

Together, the divisions had 20 research programs, which were brought into CMMI to form three program clusters: Engineering Infrastructure Systems, Innovation Sciences and Decision Engineering, and Materials Transformation and Mechanics. The current organization of the division is shown on the next page.

CMS and DMI conducted strategic planning before the merger. Thus, this plan combines and builds on the plans of the independent divisions. It also draws upon the results of the most recent Committee of Visitors reports and the advice of numerous external workshops and reviews.

